REMARKS

The Office Action has imposed a restriction requirement under 35 U.S.C. §§121 and 372 as follows:

> Group 1, Claim(s) 1-54, drawn to a compound of Formula VI and pharmaceutical composition and a pharmaceutically acceptable carrier.
>
> Group 2, Claim(s) 55 and 57, drawn to a method of using the compound for therapy or treatment or prophylaxis.
>
> Group 3, Claim 56, drawn to a method of manufacture of a medicament.

In support of the restriction requirement, the Office Action alleges that the various alleged inventions listed in Groups 1-3, do not relate to a single general inventive concept under PCT Rule 13.1 because under PCT Rule 13.2, they lack the same or corresponding special technical feature. According to the Office Action, the compound of formula VI has so many different variables that claims 1-57 relate to an extremely large number of possible compounds. The Office Action further alleges that the method claims lack unity of invention with respect to the compound claims, alleging that unity of invention has to be considered in the first place only in relation to the independent claims in an international application and not the dependent claims.

In addition, the Office Action alleges that the application contains claims directed to more than one species of the generic invention, alleging that the species lack unity of invention because they are not so linked as to form a single general concept under PCT Rule 13.1. In support thereof, the Office Action lists the following species:

> Different compounds of Formula VI due to different and varying variables;
>
> Different composition combination of Formula VI: due to different HCV antiviral

substances: nucleoside analog polymerase inhibitors, protease inhibitor, ribavirin or interferon;

Different flavivirus infections: for example, from instant specification paragraph [0017]: flavivirus include BVDV, dengue and HCV.

The Office Action further alleges in support of the species election that there are several compound structures of Formula VI, which are quite different from each other, and states that it would require independent searches for the various species. Further, the Office Action alleges that the combination of the compound of Formula VI and the HCV antiviral compounds would be independent and distinct due to the different structure of the HCV antiviral compounds, and it alleges that it would also lead to an independent search. The Office Action further alleges that different flavivirus infections are patentably independent and distinct due to their different symptoms, different cells that are involved and different mechanisms.

The Office Action is requesting applicants to elect a group and to elect a species for continued examination herein.

At the outset, before responding to the restriction requirement and election of species requirement, applicants wish to point out that there is a mistake in Paragraphs 2 and 11 with respect to the structures of Formula VI depicted. More specifically, the structure depicted in the aforementioned paragraphs show branched structures whereas the methylene groups regulated by the q' and k variables in fact join with the carbon bearing variable, W-R^8, thereby defining an obligatory cycloalkyl/cycloalkenyl ring.

In order to be responsive to the restriction requirement, applicants elect, with traverse, Group 1, i.e., Claims 1-54, for continued examination herein. In addition, in response to the

species election, applicants elect, with traverse, the species of Example 104, whereby

A = $C(=O)NHSO_2R^2$;

R^2 = cyclopropyl;

M = $CR^7R^{7'}$;

R^7 taken together with $R^{7'}$ forms cyclopropyl, substituted with $R^{7'a}$;

$R^{7'a}$ is J (defined below);

q' is 0;

k is 1,

Rz is H;

Rq is H;

W is –O-;

R^8 is quinolin-4-yl, 7-substituted with R^9 = methoxy, and 2-substiuted with R^9 = thiazol-2-yl which in turn is 4-substituted with R^{10} = isopropyl;

J is hex-1-enyl extending from the $R^7/R^{7'}$ cyclopropyl to form a macrocycle at Ry;

m = 0;

n = 0;

G is –NRy-;

Ry is J ;

R^{16} is methyl.

Moreover, the following claims read on the elected species: 1, 2, 3, 6, 7, 8, 9, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 38, 39, 41, 46, 49, 50, 51 and 52.

Applicants reserve the right to file a divisional application directed to the non-elected

subject matter. In addition, for the record, even though applicant elect claims drawn to compounds for examination on the merits, applicants, nevertheless, reserve the right to request rejoinder of commensurate in scope non-elected subject matter (e.g., process) upon the determination of allowable subject matter. In re Ochiai, 71F3d 1565, 37 USPQ2d 1127 (Fed. Cir. 1995) and In re Brouwer, 77 F3d 422, 37 USPQ2d 1663 (Fed. Cir. 1996); See also MPEP §821.04(b)).

Applicants, however, traverse the restriction requirement and respectfully request that the restriction requirement be withdrawn for the reasons given hereinbelow.

A requirement for restriction presupposes an analysis of the subject application in light of the rules governing this practice, i.e., 37 C.F.R. §1.499, and PCT Rules 13.1 and 13.2. PCT Rule 13.1 states that the international application shall relate to one invention only or a group of inventions so linked so as to form a single general inventive concept (i.e., the "requirement of the unity of invention"). PCT Rule 13.2 states that the unity of invention shall be fulfilled "when there is a technical relationship among those inventions involving one or more or the same or corresponding special technical features". PCT Rule 13.2 states "The expression 'technical feature' shall mean those technical features that define a contribution which each of the claimed inventions, considered as a whole, make over the prior art." (Emphasis added).

Applicants respectfully submit that unity of invention is the issue at hand. Applicants should be given the opportunity to argue the merits during prosecution as to whether the claims are novel and obvious in relation to the prior art. Restriction of the claims based on the prior art at this stage would deny applicants such an opportunity. Furthermore, applicants respectfully submit that the International Search Report has not raised any issue on the basis for lack of unity

of invention.

Furthermore, MPEP §1850 provides that "[i]n applying PCT Rule 13.2 [to national stage applications] examiners should consider for unity of invention all the claims to different categories of invention in the application and permit retention in the same application for searching and/or preliminary examination, claims to the categories, which meet the requirements of PCT Rule 13.2." Furthermore, the method of determining unity of invention contained in PCT Rule 13.2 is explained in detail for three particular situations relevant to the instant application. MPEP §1850(c)," Combinations of Different Categories of Claims," in pertinent part states that unity of invention shall be construed as permitting in particular the inclusion of the following combination of claims of different categories in the same application:

(A) in addition to an independent claim for a general product, an independent claim for a process and an independent claim for the use of said product.

"Moreover, 37 CFR §1.475 states that there is a unity of invention if the claims are drawn to one of the following categories:

"(5) a product, a process specially adopted for the manufacture of the said product and the use of the said product."

As defined, and in accordance with the restriction requirement imposed in the Official Action, Group 1 is directed to a product; Group 2 is drawn to a method of using the compound; and Group 3 is directed to a method of manufacture of the product.

Thus, in accordance with MPEP §1850 and 37 CFR §1.475, there is unity of invention with respect to Groups 1, 2 and 3.

Moreover, the rationale used by the United States Patent and Trademark Office

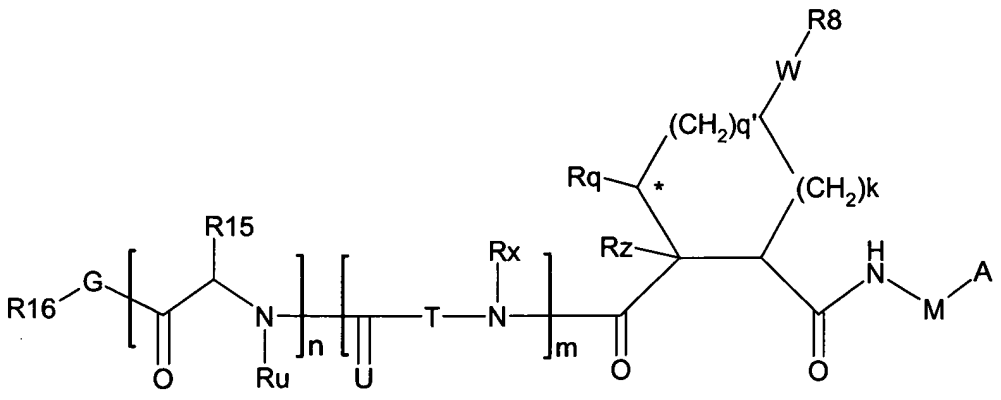
("USPTO") does not support a restriction between Groups 1, 2 and 3. The Office Action alleges that the unity of invention is considered in the first place only in relation to the independent claims in an international application. Thus, the argument, implicitly, is that claims 55 and 57 are independent claims and Claim 56 is an independent claim, in accordance with the PCT rules. This explanation does not address the issue regarding lack of unity of invention between Groups 1, 2 or 3. Even if the explanation is correct, the Office Action has not met its burden in showing that the subject matter of Group 1, 2, and 3 lack unity of invention.

Thus, the subject matter of Groups 1, 2 and 3 fully comply with the unity of invention requirement according to the PCT. They cannot, therefore, be further subdivided or restricted and must be involved in a single application. Applicants respectfully request that the lack of unity of invention be withdrawn.

With respect to the election of species requirement, applicants reiterate the arguments hereinabove. All of the subject matter in each of the claims relate to a compound of Formula VI, as described hereinabove, the contents of which are incorporated by reference. Thus, contrary to the allegations in the Office Action, the subject matter in each of the claims relate to a single inventive concept under PCT Rule 13.1.

The Office Action further alleges that the subject matter of the product claims is so diverse that there is no general concept linking them.

Applicants respectfully disagree. The present invention relates to a compound of Formula I, which defines a class of compounds that have a common utility as being useful for the treatment or prophylaxis of flavivirus infection, such as HCV. Specifically, Claim 1 recites a compound having the following formula:



VI

As the claimed compounds are similar in structure and are defined by the structure of Formula VI, such compounds are expected to have identical or similar chemical properties, mode of action, effects and reactive conditions. Thus, the compounds of Formula VI are not independent and distinct from each other, contrary to the allegations in the Office Action.

In light of this, claims of the present invention, which define an interrelated compound structure set as described in Formula VI, do not lack unity under PCT Rule 13.1 and 13.2, but have a "significant structure element", qualifying as a "special technical feature."

As described hereinabove, PCT Rule 13.1 includes within the definition of unity of invention a group of inventions so linked as to form a "general inventive concept." Applicants respectfully point out that the compounds of the present invention are linked to form a single general inventive concept, i.e., the compounds of Formula VI of the present invention possess a common structural compound with specific substitutent groups fixed in specific positions and which are limited in number, position and type.

Moreover, there can be no lack of unity of invention as long as the subject matter claimed derive from the same inventive concept. What is required for a holding of lack of unity is that the inventions be truly independent. This is the standard for lack of unity applied by the courts, as in In re Harnish, 206 USPQ 300, 306 (CCPA 1980 [unity of invention...appl[ies] wherein unrelated inventions are involved) ("Emphasis added). Independent, as defined in MPEP §802.01 means that there is no disclosed relationship between two or more subjects disclosed, that is, they are unconnected in design, operation or effect. As shown above, the subject matter of the Formula VI all have the same utility, and the compounds described by the present invention can be described by Formula VI. Thus, the subject matter which encompasses Formula VI has a disclosed relation and therefore does not lack unity of invention.

It is apparent that the USPTO is trying to restrict the subject matter of the Markush grouping. However, case law has held that the USPTO cannot require an applicant under the guise of §121 to divide up the embodiments of a single Markush claim In re Weber, 580 F2d 455, 458-459, 198 USPQ 328, 331-332 (CCPA 1978).

In addition, contrary to the allegations of the Office Action, the subject matter in Formula VI also relates to a single inventive concept under PCT Rule 13.2. As stated in MPEP §1850(D), "Markush Practice" in pertinent part, Rule 13.2 shall be considered to be met when the [chemical] alternatives are of a similar nature. [C]hemical compounds shall be regarded as being of similar nature where the following criteria are fulfilled:

(A) All alternatives have a common propriety or activity; and

(B) A common structure is present in a significant structural element as shown by all of the alternatives."

MPEP §1850(D) further states that a "significant structural element is shared by all of the alternatives" refers to cases where compounds share a common structure which occupies a large portion of their structure and the structural element may be a single component or a combination of individual components linked together." Applicants respectfully submit that all of the claims relate to compounds of Formula VI. Further, compounds of Formula VI possess the required special technical feature since the components of Formula VI linked together provide a common structural elemental and the various species all have the common activity of being inhibitors of NS3 protease of flavivirus such as hepatitis C virus. Moreover, as the claimed structures are similar in nature, such compounds within the scope of Formula VI are expected to have identical or similar chemical properties, mode of actions and effects. Thus, the claimed compounds of Formula VI are not independent and distinct from each other. Withdrawal of the election of species requirement is respectfully requested.

It is vital to all Applicants that restriction requirements and election of species requirement issue only with the proper statutory authorization, because patents issuing on divisional applications, which are, filed to prosecute claims that the Examiner held to be independent and distinct can be vulnerable to legal challenges alleging double patenting. The third sentence of 35 U.S.C. §121, which states that a patent issuing on a parent application "shall not be used as a reference" against a divisional application or a patent issued thereon, does not provide comfort to Applicants against such allegations. The Court of Appeals for the Federal Circuit has declined to hold that 35 U.S.C. §121 protects a patentee from an allegation of same-invention double patenting, Studiengesellschaft Kohle mbH v. Northern Petrochemical Co., 784 F.2d 351, 355, 228 U.S.P.Q. 837, 840 (Fed. Cir. 1986); and in Gerber Garment Technology Inc.

v. Lectra Systems Inc., 916 F.2d 683, 16 U.S.P.Q. 2d 1436 (Fed. Cir. 1990) that court held that a restriction under 35 U.S.C. §121 does not insulate a patentee from an allegation of "obviousness-type" double patenting, and in fact affirmed the invalidation on double patenting grounds of a patent that had issued from a divisional application filed following a Restriction Requirement. Furthermore, it is far from clear that the step of filing a terminal disclaimer is available to resolve a double patenting issue that arises after the issuance of a patent on the divisional application.

All these considerations indicate that the imposition of a Restriction Requirement and election of species requirement with inadequate authority can lead to situations in which an Applicant's legitimate patent rights are exposed to uncertainty and even extinguished. Accordingly, to protect a patentee's rights and to serve the public's interest in the legitimacy of issued patents, Applicants respectfully urge the Examiner not to require restriction in cases such as the present application wherein various aspects of a unitary invention are claimed.

In addition, the Courts have recognized the advantages to the public interest to permit patentees to claim all aspects of their invention, as the Applicants have done herein, so as to encourage the patentees to make a more detailed disclosure of all aspects of their invention. The CCPA has observed:

> We believe that the constitutional purpose of the patent system is promoted by encouraging Applicants to claim, and therefore to describe in the manner required by 35 U.S.C. §112 all aspects of what they regard as their invention, regardless of the number of statutory classes involved.

In re Kuehl, 456 F.2d 658, 666, 177 U.S.P.Q. 250, 256 (CCPA 1973).

Furthermore, Applicants respectfully request that in view of increased Official Fees and the potential limitations of Applicants' financial resources, a practice which arbitrarily imposes a Restriction Requirement and election of species requirement may become prohibitive, and thereby contravenes the constitutional intent to promote and encourage the progress of science and the useful arts.

Finally, applicants respectfully submit that a determination to make the pending restriction requirement and election requirement final must evidence the patentable distinctness of all three groups and the various species of Formula VI, one from the other, as presented by the Examiner.

Hence, it is respectfully requested that the Examiner reconsider and withdraw the Restriction Requirement, and the election of species requirement, and provide an action on the merits with respect to all of the claims and with respect to all of the subject matter in each of the claims..

Wherefore, the present application is in condition for allowance, which action is earnestly solicited.

Respectfully submitted,

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